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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,359	07/06/2005	David Schaffner	4662-23	8247
23117 7590 02/12/2009 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
THEODORE, MAGALIP				
ART UNIT		PAPER NUMBER		
1791				
MAIL DATE		DELIVERY MODE		
02/12/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/541,359

**Applicant(s)**

SCHAFFNER, DAVID

**Examiner**

Magali P. Théodore

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 12/18/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/ISD)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 7/6/2005.

### ***Election/Restrictions***

1. The examiner wishes to thank Applicant for correcting the erroneous listing the pending claims. Applicant's election of claims 1-7 in the reply filed on December 18, 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claim 8 stands withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on December 18, 2008.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first cone, second cone, inlet tube, rotary atomizer, circular air inlet channel and circular slot must be shown and **labeled** or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board

of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In a first instance, **claim 2** recites the broad recitation "about 40 °C to about 200 °C," and the claim also recites "about 60 °C to about 120 °C" which is the narrower statement of the range/limitation. For the sake of compact prosecution, the recitation has been read to mean "about 40 °C to about 200 °C."

In a second instance, **claim 2** recites the broad recitation "about 0 °C to about 40 °C," and the claim also recites "about 5 to about 20 °C" which is the narrower statement of the range/limitation. For the sake of compact prosecution, the recitation has been read as "about 0 °C to about 40 °C."

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leuenberger (US 5,668,183) in view of Skelbæk (WO 91/17821) and Christensen (US 5,487,916).

Regarding **claim 1**, Leuenberger teaches a method of making beadlets by feeding an aqueous emulsion of a fat soluble substance (1:51) and a water dispersible non gelling matrix sodium in a spray tower (5:1-2) into which hot air is fed (220 °C, 5:1). Leuenberger teaches forming a fluidized bed of starch-covered beadlets (6:27-32). In order for the beadlets to be consumed (human and animal nutrition, 1:15), it is inherently necessary that they be collected from the fluidized bed.

Leuenberger does not teach spraying powdered starch. However, Leuenberger teaches spraying the emulsion into a bed of powdered starch to form particles (7:28-32). Skelbæk teaches emulsifying (2:27-29) a fat soluble substance (3:37- 4:9) with a water dispersible matrix (4:16-26) and Skelbæk teaches spraying the starch itself (6:25-26). Therefore, it would have been obvious to substitute Skelbæk's sprayed starch for Leuenberger's bed of starch because Skelbæk's method of bringing the emulsion into contact with the starch is an effective alternative to Leuenberger's.

Leuenberger does not teach does not teach cold air at the bottom of the spray tower to form the beadlets. However, Christensen teaches using cold air at the bottom of the tower (figure 1:9) to form a fluidized bed in order to solidify the liquid component of the particles. Therefore, it would have been obvious to one of ordinary skill in the art to use cold air at the base of Leuenberger's spray tower because Christensen teaches doing so to solidify the particles. Alternatively, it would have been obvious to combine Christensen's cold air with Leuenberger's hot air to achieve predictable results with a reasonable expectation of success.

Regarding **claim 2**, Leuenberger's spraying temperature (220 °C, 5:1) exceeds the claimed range [about 40 °C to about 200 °C]. However, Skelbæk teaches that spray temperatures in excess of 180 °C cause a steam explosion that make the matrix capsule porous and permeable by oxygen (2:35-3:2). Therefore it would have been obvious to one of ordinary skill in the art to lower the spraying temperature taught by Leuenberger's to a temperature within the claimed range because Skelbæk teaches that higher temperatures make the product porous and susceptible to oxidation. *Alternatively*, it would have been obvious to one of ordinary skill in the art optimize the spraying temperature taught by Leuenberger because Skelbæk establishes spraying temperature as a result effective parameter that affects the porosity of the product. Optimizing a result-effective parameter known in the art does not impart patentable distinction to an invention. See MPEP 2144.05 [R-5] II, in re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Leuenberger does not explicitly teach the temperature of the fluidized bed once it contains the emulsion. However, Leuenberger teaches beginning with a bed of fluidized starch at 5 °C. Christensen teaches forming the beadlets at a temperature that solidifies their liquid component (3:10-21). Therefore it would have been obvious to one of ordinary skill in the art to maintain a Leuenberger's fluidized bed at a low temperature because Christensen teaches using low temperatures to keep the particles solid.

Regarding **claim 3**, Leuenberger does not describe the spraying apparatus. However, Christensen teaches a nozzle arrangement with an outer cylinder to carry one component of the beadlet (figure 2:10), an inner cylinder (figure 2: vertical line between numbers 7 and 31), a circular slot where the two cylinder end, and inlet tube (figure 2:7) that ends in a rotary atomizer (disk, figure 2:35) and a circular gas inlet surrounding the outer cylinder (figure 2: bounded by 10 and 14). It would have been obvious to one of ordinary skill in the art to combine these features of Christensen's apparatus with the method taught by Leuenberger to obtain predictable results with a reasonable expectation of success.

Christensen teaches cylinders and not cones. However, the slopes of these passages determine the flow directions and densities. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the slopes of the Christensen's passages in order to control the directions and intensities of their flows. Optimizing a result-effective parameter known in the art does not impart patentable distinction to an invention. See MPEP 2144.05 [R-5] II, in re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).



It is the position of the examiner that the closed end of the outer cone, the downward protrusion of the rotary atomizer and the "ending" point of the circular air channel are matters of design choice and do not carry patentable weight in defining the claimed method.

Regarding **claims 4-5**, Leuenberger teaches that the matrix is a lignin sulfonate (4:56).

Regarding **claim 6**, Leuenberger teaches that the fat-soluble substance can be vitamin A, vitamin D, vitamin E, vitamin K, a carotenoid (1:51-52), a polyunsaturated fatty acid (1:56), an oil or a fat (1:62).

Regarding **claim 7**, Leuenberger teaches that the fat soluble substance can be beta-carotene, astaxanthin, apocarotenal, canthaxanthin, apoester, citranaxanthin or zeaxanthin (1:53-54).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magali P. Théodore whose telephone number is (571) 270-3960. The examiner can normally be reached on Monday through Friday 9:30 a.m. to 6:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina A. Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Magali P. Théodore/  
Examiner, Art Unit 1791

/Christina Johnson/  
Supervisory Patent Examiner, Art Unit 1791